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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LEGREE, TRACY MICHELLE

ART UNIT

PAPER NUMBER

2681

DATE MAILED: 11/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/454,124

Applicant(s)

SEPPANEN, JORMA ANTERO

Examiner

Tracy M. Legree

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08/28/2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

**Notification of Change of Examiner**

1. U.S. Patent Application Serial No. 09/454,124 has been reassigned to Examiner Tracy Legree.

***Claim Objections***

2. Claim 1 is objected to because of the following informalities:

In claim 1, line 9, "doing" should read –during--.

In claim 1, line 10, "discernable" should read –discernible--.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5, 6, 8, 10 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parisel et al. (hereafter Parisel), U.S. Patent No. 6,381,451 in view of Besharat et al. (hereafter Besharat), U.S. Patent No. 6,219,540 and Rahman, U.S. Patent No. 6,445,916

Regarding claim 1, Parisel discloses the method of indicating the quality of a received signal at a mobile phone comprising the steps of receiving a signal from a

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remote transmitter at the mobile phone; inspecting said received signal for determining quality; and providing an output correlated to the results of said inspecting step (col. 2, lines 36 - 50; Figure 3). Parisel does not expressly disclose the step of providing a user discernible indication in response to said output. Besharat teaches a method of indicating the quality of a received signal at a mobile communication device (col. 2, lines 35 - 45, 63 - 66). Besharat also teaches providing a user discernible indication in response to an output which is correlated to the quality of the received signal (col. 4, lines 27 - 35). Since Parisel and Besharat both teach analogous methods in which a receiver inspects a received signal for determining its quality, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Parisel according to the teachings of Besharat such that a user discernible output is provided that correlates with the results of the inspecting step so that the user would be aware of the presence of noise in the signal. Neither Parisel nor Besharat disclose that the signal quality is indicated in terms of an acceptable percentage. In same field of endeavor, Rahman discloses a wireless communication system for evaluating the quality of service in a wireless communication system for voice traffic, data traffic or both. (col. 1, lines 1-3) Rahman further discloses that the target quality of service may be defined in terms of meeting a target signal-to-interference ratio a certain percentage of the time. (col. 10, lines 47-55) It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Parisel in view of Besharat such that the signal quality of indicated and displayed to the user in terms of an acceptable percentage since the manner in which

the signal quality is indicated lacks criticality in view of the overall function of the invention.

Regarding claim 2, Parisel in view of Besharat and in view of Rahman discloses all the limitations of claim 1. Parisel further teaches comparing the received signal with a predetermined threshold, and generating a first output whenever the comparing step has met said threshold and for otherwise generating a second output different from said first output (col. 4, lines 36 - 57; Figure 3, element 58).

Regarding claim 3, Parisel in view of Besharat and in view of Rahman discloses all the limitations of claim 2. Parisel further discloses use with a digital transmission and receiving system wherein the inspecting step includes the step of determining the BER of the received signal (col. 5, lines 16 - 20).

Regarding claim 4, Parisel in view of Besharat and in view of Rahman discloses all the limitations of claim 3. Parisel does not expressly disclose a predetermined time-out period. Besharat does teach ensuring that the received signal has failed to meet the threshold value for a predetermined time-out period before generating the output indicative of such a failure. Besharat teaches that if the signal quality is below an acceptable level for a certain time period, then an out of range confirmation signal is output (col. 4, lines 27 - 37; Figure 7; col. 7, lines 3 - 58). Since Parisel and Besharat both teach analogous methods in which a receiver inspects a received signal for determining its quality, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Parisel according to the teachings of Besharat by ensuring that the received signal has failed to meet the

threshold value for a predetermined time-out period before generating the output indicative of such a failure so that the user would not be alerted to lapses in signal quality that are only temporary.

Regarding claim 5, Parisel in view of Besharat and in view of Rahman discloses all the limitations of claim 1. Besharat further teaches the step of establishing a visual indicator for said user discernible indication (col. 4, lines 34, 35), which is not disclosed by Parisel. It would have been obvious to one of ordinary skill in the art at the time the invention was made to enhance the method of Parisel by establishing a visual indication as taught by Besharat so that a user could have access to the indication simply by looking at a display.

Regarding claim 6, Parisel discloses the method of indicating the quality of a received signal at a mobile phone comprising the steps of receiving a signal from a remote transmitter at the mobile phone; separating control signals from voice signals; inspecting said received voice signal for determining whether its quality is at least either above or below a predetermined threshold, the predetermined threshold forming a boundary condition; and providing an output correlated to the results of said inspecting step. Voice and control signals are received in a time division multiplexed format. (col. 2, lines 36 - 50; Figure 2; col. 3, lines 29 - 45; col. 4, lines 36 - 57; Figure 3, element 58). Parisel does not expressly disclose providing a user discernible indication.

Besharat teaches a method of indicating the quality of a received signal at a mobile communication device (col. 2, lines 35 - 45, 63 - 66). Besharat also teaches providing a user discernible indication in response to an output which is correlated to the quality of

the received signal (col. 4, lines 27 - 35). Since Parisel and Besharat both teach analogous methods in which a receiver inspects a received signal for determining its quality, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Parisel according to the teachings of Besharat such that a user discernible output is provided that correlates with the results of the inspecting step so that the user would be aware of the presence of noise in the signal. Neither Parisel nor Besharat disclose that the signal quality is indicated in terms of an acceptable percentage. In same field of endeavor, Rahman discloses a wireless communication system for evaluating the quality of service in a wireless communication system for voice traffic, data traffic or both. (col. 1, lines 1-3) Rahman further discloses that the target quality of service may be defined in terms of meeting a target signal-to-interference ratio a certain percentage of the time. (col. 10, lines 47-55) It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Parisel in view of Besharat such that the signal quality of indicated and displayed to the user in terms of an acceptable percentage since the manner in which the signal quality is indicated lacks criticality in view of the overall function of the invention.

Regarding claim 8, Parisel in view of Besharat and in view of Rahman discloses all the limitations of claim 6. Besharat further teaches that said user discernible step includes the step of causing a visible display to pulsate in the form of blinking (col. 4, lines 49 - 57), which is not disclosed by Parisel. It would have been obvious to one of ordinary skill in the art at the time the invention was made to further enhance the

method of Parisel by providing a pulsating visible display as taught by Besharat so that the blinking of the display might draw the user's attention to the display, or so that a different message or indication could alternately be displayed.

Regarding claim 10, Parisel in view of Besharat and in view of Rahman discloses all the limitations of claim 6. Besharat further teaches the step of causing a user discernible audio signal indicating the voice signal quality, wherein the audible alert indicates that the voice signal quality has fallen below a predetermined threshold (col. 4, line 58 to col. 5, line 7; col. 5, lines 51, 52), which is not disclosed by Parisel. It would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the method of Parisel such that an audio alert is provided as taught by Besharat so that the user would not have to be looking at a display in order to be alerted to a signal quality problem.

Regarding claim 12, Parisel in view of Besharat and in view of Rahman discloses all the limitations of claim 6. Besharat further teaches the step of ensuring that the results of the inspecting step have remained over a preselected time-out period before generating the user discernible indication, which is not disclosed by Parisel. Besharat teaches that if the signal is below an acceptable level, then a timer is started. If the signal quality stays below an acceptable level for a certain time period, then an out of range confirmation signal is output (col. 4, lines 27 - 37; Figure 7; col. 7, lines 3 - 58). It would have been obvious to one of ordinary skill in the art at the time the invention



was made to further modify the method of Parisel such that a predetermined time-out period exists as taught by Besharat so that the user would not be alerted to lapses in signal quality that are only temporary.

Regarding claim 13, Parisel discloses an apparatus for indicating the quality of a received signal at a mobile phone comprising a signal-receiving antenna on the mobile phone for receiving signals transmitted from a remote location; a signal quality determining arrangement in said mobile phone coupled for inspecting said received signal and providing an output signal indicative thereof (col. 2, lines 36 - 50; Figure 3). Parisel does not expressly disclose a user discernible indication generator operable in response to said output. Besharat teaches an apparatus for indicating the quality of a received signal at a mobile communication device (col. 2, lines 35 - 45, 63 - 66). Besharat also teaches means for providing a user discernible indication in response to an output which is correlated to the quality of the received signal (col. 4, lines 27 - 35). Since Parisel and Besharat both teach analogous devices in which a receiver inspects a received signal for determining its quality, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Parisel according to the teachings of Besharat by including a user discernible indication generator wherein an output is provided that correlates with the results of the inspecting step so that the user would be aware of the presence of noise in the signal. Neither Parisel nor Besharat disclose that the signal quality is indicated in terms of an acceptable percentage. In same field of endeavor, Rahman discloses a wireless communication system for evaluating the quality of service in a wireless communication

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system for voice traffic, data traffic or both. (col. 1, lines 1-3) Rahman further discloses that the target quality of service may be defined in terms of meeting a target signal-to-interference ratio a certain percentage of the time. (col. 10, lines 47-55) It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Parisel in view of Besharat such that the signal quality of indicated and displayed to the user in terms of an acceptable percentage since the manner in which the signal quality is indicated lacks criticality in view of the overall function of the invention.

Regarding claim 14, Parisel in view of Besharat and in view of Rahman discloses all the limitations of claim 13. Parisel further discloses a comparator coupled for comparing said received signal with a predetermined threshold, said comparator generating a first output whenever said received signal has met said threshold and for otherwise generating a second output different from said first output (col. 4, lines 36 -57; Figure 3, element 58).

Regarding claim 15, Parisel in view of Besharat and in view of Rahman discloses all the limitations of claim 14. Parisel further discloses use in conjunction with a digital transmission and receiving system which includes a BER measuring device operable over a sampling period (col. 5, lines 16 - 20).

5. Claim 7 is rejected under 35 U.S. C. 103(a) as being unpatentable over Parisel in view of Besharat and in view of Rahman as applied to claim 6 above, and further in view of U.S. Patent No. 5,802,039 to Obayashi et al.

Parisel in view of Besharat and in view of Rahman does not disclose the method wherein the inspecting step includes the step of quantifying the amount, in terms of the percentage acceptable, by which the voice signal fails to meet the predetermined threshold. Obayashi discloses a mobile radio communication apparatus, in which the BER of a received signal is measured and displayed (col. 4, lines 51 - 60). Obayashi teaches the step of quantifying the amount by which a signal fails to meet a predetermined threshold, which is not expressly disclosed by Parisel. Obayashi displays the BER when it rises above a predetermined level, which would correlate with a decrease in the received signal quality. A BER code is displayed which corresponds to the level of the BER. The amount by which the displayed BER code is above the threshold code is a representation of the amount by which the received signal fails to meet the predetermined threshold (col. 13, line 66 to col. 14, line 5). Neither Parisel nor Obayashi teach quantifying the amount in terms of the percentage acceptable. However, this is taught by Rahman in col. 10, lines 47-55 as described above. Since Parisel and Obayashi both teach measurement of signal quality by a mobile communication device and since Rahman teaches measurement of the signal quality by a mobile communication device in terms of an acceptable percentage, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method taught by Parisel in view of Besharat and in view of Rahman by quantifying the amount by which the signal fails to meet the predetermined threshold as taught by Obayashi, so that a user might know, for example, the extent to which he is out of range.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parisel in view of Besharat and in view of Rahman as applied to claim 8 above, and further in view of U. S. Patent No.5,802,039 to Obayashi et al.

Parisel in view of Besharat and in view of Rahman does not teach that the pulsation is correlated to the amount the received voice signal departs from the predetermined threshold level. Obayashi discloses a mobile radio communication apparatus, in which the BER of a received signal is measured and displayed (col. 4, lines 51 - 60). If the BER reaches a certain threshold, the display blinks. Also, the speed of the blinking is changed in accordance with the value of the BER (col. 13, lines 32 - 35, 59 - 62). Since Parisel, in view of Besharat, Rahman and Obayashi all teach measurement of signal quality by a mobile communication device, and the pulsating of a visible display which gives an indication that signal quality has fallen below a threshold, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Parisel in view of Besharat and in view of Rahman such that the speed of the blinking of the display would correlate with the amount that the received signal departs from the predetermined threshold, as taught by Obayashi, so that the user could clearly notice the state of the received voice signal by glancing at the display.

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parisel

in view of Besharat and in view of Parisel as applied to claim 10 above, and further in view of U.S. Patent No.6,243,568 to Detlef et al.

Parisel in view of Besharat and in view of Parisel does not disclose the step of correlating the magnitude of the audio signal to the amount of departure of the audio signal from said predetermined threshold. Detlef teaches a wireless communication system and method in which a user is given an audio warning signal when the mobile station receives a voice signal below a minimum signal quality level. Detlef teaches that a static noise sound may be used for this purpose (col. 5, lines 26 - 67). Detlef also teaches that the magnitude of the static can be varied in order to correlate to the amount of departure of the voice signal from the predetermined threshold (col. 10, lines 30 - 40). Since Parisel, in view of Besharat, and in view of Rahman and Detlef all teach methods for measuring voice signal quality and providing a user with an indication of the quality, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Parisel in view of Besharat and in view of Rahman such that the magnitude of the audio warning signal varies as taught by Detlef so that a user would have an indication, for example, of the extent to which he is out of range.

### ***Response to Arguments***

8. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Zuqert et al., U.S. Patent No. 6,466,832 discloses a user interface including a display such as an LED bar graph which is indicative of the signal quality wherein the signal quality is a multi-level function of the percentage of packets in which errors are detected and of the received signal strength.

Hassan et al., U.S. Patent No. 5,812,968 discloses that signal quality can be measured in terms of whether the bit error rate of four percent has been exceeded.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

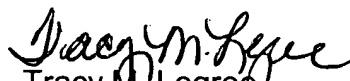
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy M. Legree whose telephone number is (703) 305-3859. The examiner can normally be reached on Mon-Thur and alternate Fri 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne D. Bost can be reached on (703) 305-4778. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

  
Tracy M. Legree  
Primary Examiner  
Art Unit 2681

TML  
November 11, 2002